

REMARKS

Summary of Claim Status

Claims 1, 4-9, and 11-26 are pending in the present application after entry of the present amendment. Claims 1, 4-9, and 15-19 are rejected for the reasons discussed below. Claim 3 has been canceled, thereby rendering its rejection moot. Claims 11-14 were marked as rejected in the Office Action Summary, but were indicated as objected to as depending from a rejected base claim, but otherwise allowable if properly rewritten in independent form. The remainder of this response assumes that Claims 11-14 are in fact objected to, but otherwise allowable if properly rewritten.

Claims 20-26 are allowed. Applicants thank the Examiner for this acknowledgement of patentable subject matter.

Applicants respectfully request favorable reconsideration of the claims and withdrawal of the pending rejections and objections in view of the present amendment and in light of the following discussion.

Rejections Under 35 U.S.C. § 103

Claims 1, 4-6, 8, 9, and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dortu et al., U.S. Patent No. 6,252,443 ("Dortu") in view of Park, U.S. Patent No. 6,275,079 ("Park"), and further in view of Trimberger et al., U.S. Patent No. 5,811,985 ("Trimberger"). Applicants respectfully disagree, and traverse the rejection with respect to all claims. However, Applicants believe the rejection is moot in light of the present amendments.

Applicants have amended Claim 1 to recite that the first voltage terminal is coupled to the voltage distribution line for operating the delay locked loop in a high frequency mode when the at least one configuration memory cell stores a first data value, and that the second voltage terminal is coupled to the voltage distribution line for operating the delay locked loop in a low frequency mode when the at least one configuration memory cell stores a second data value. Applicants submit that Dortu,

Park, and Trimberger, alone or in any combination, do not teach or even suggest at least such features.

The Office Action admits that Dortu does not teach a delay control circuit coupled to the primary delay line and a voltage distribution line, and cites Park for teaching that feature. The Examiner cites element 702 of Park for teaching a delay control circuit. In Park, however, a voltage is selected according to the purpose of the circuit, and in particular is used to support a stand-by mode and an active mode for a synchronous DRAM. See, e.g., Park at col. 5, lines 27-38. That is, Park provides a high supply power in the active mode, and a low supply power in the stand-by mode for reducing power consumption. See, e.g., Park at col. 5, lines 27-38, and at col. 2, lines 26-32.

Furthermore, Park also indicates that a different power supply V_{pp} , rather than a first power supply V_{cc} , is used to achieve improved jitter performance, since V_{pp} has less switching activity and thus less noise. See, e.g., Park at col. 4, line 66 – col. 5, line 6, and at col. 2, lines 17-26.. Thus, it is clear in Park that multiple power supplies are used to support and idle or stand-by state for power reduction, and for minimizing jitter induced by noise in the power supply source.

In contrast, Claim 1, as amended, recites operating a delay locked loop in a high frequency mode and a low frequency mode, corresponding to the configuration memory cell storing a first data value and a second data value, respectively. This, for example, allows a user to operate the delay locked loop at a high frequency by storing a first value in the configuration memory cell, and operate the delay locked loop at a low frequency by storing a second value. See, e.g., Specification at page 9, paragraphs [0026]-[0027].

Also, although Trimberger may disclose the use of a configuration memory cell to control a multiplexer, Trimberger does not appear to relate to delay locked loops, and certainly does not teach storing values in a configuration memory cell for operating a delay locked loop in one of a low frequency mode and a high frequency mode. Thus, Applicants believe it would not have been obvious to modify Dortu and Park with Trimberger in the manner suggested by the Office Action.

Finally, Applicants submit that *prima facie* obviousness has not been established because Park is non-analogous art. In particular, Park relates to an analog delay locked loop circuit, as repeated throughout Park, having analog elements such as a phase detector, charge pump, and low pass filter. See, e.g., Park at Abstract, col. 1, lines 5-8, and col. 5, line 27, all referring to an analog DLL. Dortu, on the other hand, relates to a digital delay locked loop. As is notoriously well-known, analog and digital circuits are very different, and analog engineers and digital engineers rarely interact. Thus, Applicants submit it would not have been obvious to modify Dortu with Park in the manner suggested by the Office Action.

Therefore, Applicants submit that Claim 1 is allowable, and allowance of Claim 1 is respectfully requested.

Claims 4-6, 8, 9, and 15 depend from Claim 1, and thus include all of the limitations of Claim 1. Applicants believe Claim 1 is allowable for the reasons set forth above. Therefore, for at least the same reasons, Applicant believes Claims 4-6, 8, 9, and 15 are also allowable, and respectfully requests allowance of such claims.

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Dortu in view of Park and Trimberger, and further in view of Krishanmurthy, U.S. Patent No. 6,271,713 ("Krishanmurthy"). Applicants respectfully disagree, and traverse the rejection. Applicants submit that Dortu, Park, Trimberger, and Krishanmurthy, alone or in any combination, do not teach or even suggest the claimed invention. However, Applicants believe the rejection is moot in light of the present amendments and remarks.

Claim 7 depends from Claim 1, and thus includes all of the limitations of Claim 1. Applicants believe Claim 1 is allowable for the reasons set forth above. Therefore, for at least the same reasons, Applicant believes Claim 7 is also allowable, and respectfully requests allowance of Claim 7.

Claims 16-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art, Fig. 1 in the present application ("APA"), in view of Park, and further in view of Trimberger. Applicants respectfully disagree, and traverse the

rejection with respect to all claims. However, Applicants believe the rejection is moot in light of the present amendments.

Applicants have amended Claim 16 to recite if the at least one configuration memory cell is in a first state, the voltage selection circuit couples the first voltage terminal to the voltage distribution line for operating the delay locked loop in a high frequency operation mode, and if the at least one configuration memory cell is in a second state, the voltage selection circuit couples the second voltage terminal to the voltage distribution line for operating the delay locked loop in a low frequency operation mode. Applicants respectfully submit that APA, Park, and Trimberger, alone or in any combination, do not teach or even suggest such features.

As noted above with respect to Claim 1, Park merely teaches using multiple power supplies for reducing power consumption, and for minimizing jitter from noise in a power supply. In contrast, Claim 16 recites operating a delay locked loop in a high or low frequency mode in response to a first or second state of the configuration memory cell. Thus, Applicants believe that Park does not teach or even suggest the invention recited in Claim 16. APA and Trimberger do not cure the failings in Park.

Therefore, Applicants believe Claim 16 is allowable over the cited references, and respectfully requests allowance of Claim 16.

Claims 17 and 18 depend from Claim 16, and thus include all of the limitations of Claim 16. Applicants believe Claim 16 is allowable for the reasons set forth above. Therefore, for at least the same reasons, Applicant believes Claims 17 and 18 are also allowable, and respectfully requests allowance of Claims 17 and 18.

Objections

Claims 11-14 are objected to as being dependent from a rejected base claim, but indicated as otherwise allowable. Applicants thank the Examiner for this acknowledgement of allowable subject matter.

Applicants believe that all rejections have been overcome by the above amendments and remarks, and that these objections have therefore been overcome. Therefore, Applicants respectfully request allowance of Claims 11-14.

Conclusion

Applicants acknowledge an unusually thorough and helpful analysis of all pending claims by the Examiner.

No new matter has been introduced by any of the above amendments. In light of the above amendments and remarks, Applicants believe that Claims 1, 4-9, and 11-26 are in condition for allowance, and allowance of the application is therefore requested. If action other than allowance is contemplated by the Examiner, the Examiner is respectfully requested to telephone Applicants' attorney, Justin Liu, at 408-879-4641.

Respectfully submitted,



Justin Liu
Attorney for Applicants
Reg. No. 51,959

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450, on February 2, 2006.

Julie Matthews
Name


Signature